

Need for reliable data on sharks

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A juvenile white shark swims in the Port Stephens region. Credit: William Gladstone

It is a fact – there have been 25 shark attacks in the past eight months in Australia, compared with 23 in all of 2014. However, scientists dispute this nominal increase is cause for a shark cull in northern NSW.

Ballina Shire mayor David Wright and about 200 residents have called for a cull after two shark attacks in July and the death in February of Tadashi Nakahara, 41, who was attacked at Shelly Beach.

Marine biologist Bill Gladstone, head of the School of Life Sciences at the University of Technology Sydney, says this knee-jerk reaction to shark attacks is no solution. "With just fear and hype to go on, and no reliable data as yet about the number of sharks swimming in our waters, culling is not a logical approach," says Professor Gladstone.

According to the Australia Shark Attack File, a database maintained by Taronga Zoo, one to two people die each year from shark attacks, but compare that with your chance of drowning. In 2013-2014, 266 people drowned, while fatal road crashes claimed 1193 lives.

Many of the attacks have been attributed to white sharks (*Carcharodon carcharias*), which is a vulnerable – and protected – species in Australia. Claims have been made that protection has boosted the white shark population, and is therefore to blame for the recent rise in the number of attacks. However, scientists don't know whether the number of white sharks is increasing.

In a bid to address the dearth of census data on sharks, and to learn more about shark behaviour, the CSIRO has been carrying out DNA testing and acoustic and satellite tagging of white sharks along the east coast. It has also contributed to aerial surveys done by UTS.

From 2010 to 2014, Professor Gladstone and his research team undertook helicopter surveys between Newcastle and Seal Rocks, 200 kilometres north of Sydney, working with CSIRO white shark expert Barry Bruce. The work confirmed the area was a nursery for [white shark](#) juveniles.

"Throughout most of the year we would see two or three sharks, and then in November, we would see a peak of 60 of them," Professor Gladstone says. This large increase in the number of juvenile white sharks lasted only a few weeks, before numbers decreased as the sharks moved away.

In a separate, independent initiative south of Sydney, the volunteer Australian Aerial Patrol has scouted for sharks off the Illawarra beaches south to Ulladulla since 1957.

Fisheries consultant Duncan Leadbitter, a visiting fellow at the University of Wollongong and a part of the Australian Aerial Patrol, says: "I am in the middle of analysing all their data over 70 years and have found that there is no increase in the numbers of sharks. Our last fatality was in 1966 and we've tried a number of methods, even culling, but really, it should be a government approach to [conduct] aerial patrols of our beaches nationally, and not just [left] up to us as an NGO."

Leadbitter and Professor Gladstone argue there is no evidence that culling reduces shark attacks and deaths. Last year, after seven fatal attacks between 2010 and 2013, the West Australian government sanctioned a cull using drum lines to bait and hook white and bull sharks.

After widespread public protests, international condemnation from high-profile figures, such as golfer Greg Norman, entrepreneur Sir Richard Branson and British actor Ricky Gervais, and advice from the WA Environmental Protection Authority, the government abandoned the program in September 2014.

In Byron Bay, Don Osborne, president of the local branch of the ocean conservation organisation Surfrider Foundation Australia, says he does not support culling and puts the onus on the government to act.

"Governments [both state and federal] need to drive this. They need to

carry out more in-depth research into shark behaviour and release that information to the public," he says.

Professor Gladstone says that while some might point to climate change, the warming of the East Australian Current or numerous other factors for the increase in the number of [shark attacks](#), there is no conclusive evidence to establish a cause. In the meantime, he says, it's up to beachgoers to share the oceans.

"Researchers are looking into other shark deterrents such as artificial kelp, bubbles or sound-based systems but none are yet scientifically proven," he says.

"As people entering a marine environment, it's about changing our behaviour not the sharks' – making a judgment and not surfing or swimming after long periods of rain or when there are lots of fish about."

Provided by University of Technology, Sydney

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